

MARKO ZERDIN

PRINCIPAL SOFTWARE ENGINEER • FOUNDER • ALGORITHM & OPTIMISATION SPECIALIST

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SUMMARY

I'm Marko, a founder-engineer based in Bath, UK. I have over 25 years experience in enterprise software, combinatorial optimisation, configuration management, and DevOps. I have built and led two B2B product companies, one SaaS. I am the creator of a category-defining configuration management platform with first-of-its-kind automated software migration, used to accelerate software deployment and maintenance, document live complex systems, and de-risk transformations across enterprise software ecosystems. I am also a former algorithms developer at ClickSoftware, with peer-reviewed publications on large-scale field-service scheduling.

TECHNICAL PROFICIENCIES

Programming Languages & Frameworks: C#; .NET (Core & Framework); Managed Extensibility Framework (MEF); Entity Framework (EF); ASP.NET; Blazor; PostSharp; TypeScript; JavaScript; React; Next.js; Astro; SQL; PL/SQL; PowerShell; Python; C/C++; Java; XSLT; XPath; Perl; Wolfram Language / Mathematica

Cloud & DevOps: Azure (App Service, Event Grid, Functions, SQL, Storage, serverless); Terraform; AWS; GCP; Docker; microservices; distributed systems; event-driven architecture (EDA); OAuth; JWT; RBAC; Git; GitHub; GitHub Actions; CI/CD pipelines; IaaS; SaaS

Data / DBs: Oracle (DB admin, DB design, PL/SQL, query optimisation); MS SQL Server (T-SQL); SQLite; ArangoDB; MySQL; PostgreSQL; MongoDB; DynamoDB; Elasticsearch; automated data pipelines; object-relational mapping (ORM)

AI & Machine Learning: OpenAI; Claude / Claude Code; Cursor / Cursor CLI; Bolt

Enterprise: Cloud-native design; Infrastructure as Code (IaC); cross-cloud data migrations; enterprise software migrations; Salesforce (metadata API, partner API, tooling API, Apex, configuration generation / automation, security setup and analysis)

Testing & Automation: Playwright; XUnit; NUnit; test-driven development (TDD); system-level measurement and test design; test methodology; test data design and seeding; concurrent testing; fuzz testing; search-based software testing (SBST); adversarial testing; automated configuration tuning; automated configuration capture and analysis; process-centred and end-to-end simulation; automation of hard-to-automate problems (e.g. software migration including feature mapping)

Algorithms: combinatorial optimisation; metaheuristics; local search; simulated annealing; GRASP; genetic algorithms; ant-colony optimisation; genetic programming; linear programming; mixed-integer programming; complexity analysis; run time optimisation; space optimisation; algorithm design; numerical methods for science

Paradigms: declarative programming; functional programming; logic programming; object-oriented design; SOLID; DDD; constraint logic programming; constraint propagation; design patterns

CORE STRENGTHS

- Creating products that are well-architected, performant, innovative, solve real problems, and that people enjoy using and keep using for years.
 - Architecture for long-running, highly configurable enterprise software; configuration DevOps, configuration tuning (aligning software with business needs), migration tooling, and dependency & impact analysis
 - Align executives, users, and engineers; reframe problems and ship lean, scalable solutions that holistically address business concerns
 - Schema/index design, explain plans, query planning/profiling; SQL Server, Oracle, ArangoDB
 - AI-boosted development workflows (GitHub Copilot, Cursor, Bolt, Codex) applied with judgement and experience to ship clean, well-designed, maintainable software
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SELECTED ACHIEVEMENTS

- Transformed an on-premise, single-product configuration management solution into a multi-product SaaS with automated live-system documentation, health checks, and pre-migration gap analysis. New customer onboarding for Salesforce Application Management Services cut from weeks to days.
 - Created a first-of-its-kind automated general-purpose software migration solution (configuration + data + functional mapping), enabling cross-product moves with minimal downtime and risk. Pre-migration assessment and gap analysis for Marathon Oil was decreased from 3 weeks to 4 days.
 - Built Xoom, a configuration management suite for ClickSoftware, licensed by enterprises including Sky, Bell Canada, and CenturyLink. Where there were previously no means to do any automated configuration management, Xoom enabled revision control, environment comparison, configuration analysis, and automated deployment. With Xoom, Sky successfully operated 30+ environments, keeping them all in sync, allowing over 6-times increase in business experiments and tuning. Bell Canada went from 4 to 15 production deployments per year, dramatically decreasing time-to-live for operational changes, with direct annual benefit of \$1.5M, and significantly greater intangible benefits in business agility.
 - Designed and implemented custom production optimisers for large field-service operations. Custom optimiser for long-term planning of outages during maintenance for National Grid, enabling a 15% increased resource utilisation and 8% increase in network capacity during maintenance work. Intelligent task grouping initially for Deutsche Telekom, later included in ClickSoftware and ultimately, after acquisition, into Salesforce product.
 - Built a full-lifecycle service simulator for Sky to model medium- and long-term impacts of proposed service policy changes. Avoiding the usual guesswork about the operational impact, the simulation used production task data to model the whole lifecycle including task creation, appointment booking, in-day optimisation and night optimisation, and assessed the impact on lead times, schedule efficiency, capacity and cost as a result of various proposed service policy changes.
 - Cut a critical tax-registry SQL query from 45 minutes to 15 seconds (~180x) for Slovenia's national tax authority.
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PUBLICATIONS (PEER-REVIEWED)

- **When the Rubber Meets the Road: Bio-inspired Field-Service Scheduling in the Real World** – chapter in Bio-inspired Algorithms for the Vehicle Routing Problem (Springer)
- **Optimization Strategies for Restricted Candidate Lists in Field-Service Scheduling** – chapter in Intelligent Computational Optimization in Engineering (Springer)

WORK EXPERIENCE

2021 - Present	CONFIGO SOFTWARE – FOUNDER & PRINCIPAL ENGINEER B2B SaaS • Enterprise • DevOps • Software Migration • Automation • Configuration Management - Built a general-purpose configuration DevOps platform for long-running enterprise software that auto-discovers/documents live systems, monitors drift, diffs across orgs/environments, and promotes governed config changes. - Built a general-purpose software migration engine (configuration + data + functional mapping); in use for ClickSoftware to Salesforce migrations, with additional migrations in development. Tech stack: C#, .NET Core & Framework, PostSharp, ASP.NET, JSON.API, Entity Framework (EF), Microsoft SQL Server (MSSQL), SQLite, OAuth, JavaScript, TypeScript, React, Tailwind, Azure (App Service, Storage, Key vaults, Event Grid, Docker, Functions, Bicep), Astro, Next.js, PowerShell, XSLT, YAML, NUnit, xUnit, Salesforce, ClickSoftware, REST, Web Services, Node.js
2007 - Present	ZANY ANTS (XOOM TOOLS) – FOUNDER & PRINCIPAL ENGINEER Enterprise • Optimisation • Configuration Management • Algorithm design • Automation - Started as an algorithm consultancy for ClickSoftware; evolved into a product company shipping the Xoom configuration suite. - Licensed to enterprise customers (e.g., Sky, Bell Canada, CenturyLink). - Built an automated configuration-tuning tool for ClickSoftware that runs simulations on production data to align system settings with stated business objectives. Tech stack: C#, .NET Framework, PostSharp, Microsoft SQL Server (MSSQL), Oracle, SQLite, OAuth, JavaScript, PowerShell, XSLT, NUnit, Perl, Salesforce, ClickSoftware, REST, Web Services
2002 - 2014	INDEPENDENT CONSULTANT – SENIOR LOGIC / ALGORITHMS EXPERT Enterprise • Professional Services • Algorithm Design • Optimisation • Automation - Designed and delivered non-routine optimisation and logic solutions across field-service and adjacent domains. - Developed innovative automation solutions, including “extended go-live” with daily system reconfiguration, and end-to-end enterprise simulation to assess operational cost of SLA changes Tech stack: C++, STL, Perl, C#, .NET Framework, Microsoft SQL Server (MSSQL), Oracle, SQLite, PowerShell, ClickSoftware
2000 - 2002	CLICKSOFTWARE – SENIOR ALGORITHMS DEVELOPER Algorithm Design • Combinatorial Optimisation • Metaheuristics • Constraint Programming Developed core combinatorial optimisation capabilities for ClickSoftware's market-leading field service management software with Fortune 100 customers.
1997 - 2000	IXTLAN TEAM – SOFTWARE DEVELOPER Enterprise • Public Sector Systems • Database Design - Built large-scale public sector apps (national tax registry, national physical location management system) using PowerBuilder and Oracle PL/SQL. - Developed a declarative business rules engine that decimated engineering effort per rule and accelerated (10x) delivery timelines.